CHAPTER 2

ORGANIZATION AND ADMINISTRATION

As an electronics supervisor, you will have duties and responsibilities that involve more than just repairing equipment. You will assume the additional duties of a work center administrator. We have designed this chapter to familiarize you with the standard electronics organization and basic administrative requirements. We will also present some methods for carrying out these new responsibilities.

You can find additional information on general organization and administration in *Military Requirements for Petty Officer Second Class,* NAVEDTRA 12045; *Military Requirements for Petty Officer First Class,* NAVEDTRA 12046; and *Military Requirements for Chief Petty Officer,* NAVEDTRA 12047. In addition to the above sources, we recommend that you also read *Shipboard Electronics Material Officer,* NAVEDTRA 10478-B.

ORGANIZATION

To administer your division effectively and efficiently, you must have a sound division organization. A sound division organization has a clear organizational structure and definite policies and procedures. It also has whatever other controls are needed to make sure the division can complete its mission under all conditions.

The basic administrative and functional organization in ships is prescribed by OPNAVINST 3120.32, *Standard Organization and Regulations of the U.S. Navy (SORM).* The SORM, a Chief of Naval Operations publication, prescribes the general pattern for a ship's organization. It eases the process of escalating from peacetime status to wartime status without major organizational changes. The standard requirements for organization aboard each ship type and class are defined by the type commander or higher authority. These requirements are intended to help commanding officers administer their units in the best possible manner. The electronics division organization is basically the same aboard all ships and shore commands. Variations in the organization within ships of the same type and class are usually caused by such factors as the number of experienced personnel, the differences in the ships' employment or material condition, and the methods that different division officers or senior petty officers use to organize and run their divisions.

ORGANIZATION BILL

Every level of command (ship, department, division, and so on) has an organization bill. The organization bill for a particular level describes the duties and responsibilities of personnel assigned to that level. It also prescribes policy and procedures peculiar to that level. The electronics organization bill is the means by which the primary electronics officer, the electronics material officer (EMO), delegates responsibility and authority to subordinates.

The following paragraphs identify positions usually listed in the electronics organization bill and primary responsibilities associated with those positions.

Personnel

The *electronics material officer (EMO)* is a commissioned officer or warrant officer who is responsible for the repair, upkeep, and preservation of all assigned electronic equipment and spaces. The EMO is detailed by the commanding officer to the operations department or to the combat systems officer.

The *assistant electronics material officer (AEMO)* (normally a warrant officer or limited duty officer (LDO) on large combat vessels) assists the EMO.

The *leading Electronics Technician* is the senior Electronics Technician assigned to the vessel.

Group supervisors are the leading communications, radar, data (DSs), interior communications (ICs), and weapons (FCs) personnel detailed by the EMO.

The proper assignment of available personnel for the upkeep of equipment (and for other necessary duties) is essential. It is particularly critical if the division is short of personnel or if the available technicians are inexperienced. The leading petty officer must always be aware of the qualifications of the onboard technician.

If the division is well staffed, inexperienced people may be assigned to work with more experienced crew members. In such cases, the leading petty officer should ensure that the inexperienced personnel actually receive

technical instruction, rather than merely act as toolbox carriers.

It is not possible to set up a "standard" electronics repair organization chart, but some type of chart (applicable to ETs) should be posted in the EMO office or in the workshop. Although the preparation of an electronics repair organization chart is primarily the responsibility of the EMO, the leading ET plays an important part.

The electronics organization chart should be organized into blocks according to the various types of equipment the division maintains. The names of the technicians assigned to the various groups of equipment can then be written under the appropriate blocks, with the top name being that of the supervisor in charge of that particular group. In the final breakdown of duties, a certain number of equipment units maybe assigned to one individual.

An advantage of such an arrangement is that the responsibility for the maintenance of certain equipment is placed on individual technicians.

In smaller vessels, of course, the equipment to be maintained and the electronics personnel available are reduced proportionately.

Responsibilities

As an ET1 or ETC, you may be either the leading ET or an equipment technician, depending on the size of the command.

The leading ET assists the EMO and is responsible for directly supervising the preventive and corrective maintenance of all electronic equipment. The leading ET also ensures that all records and publications are up-to-date and available for reference, prepares required reports, and supervises the cleanliness and upkeep of the electronics spaces.

The radar, communications, and carrier-controlled approach and air navigation equipment technicians are responsible to their respective group supervisor and the leading ET for the preventive and corrective maintenance of all equipment for which they are responsible.

ELECTRONICS DIVISION ORGANIZATION MANUAL

The electronics division organization manual is made up of the division's instructions and bills, general safety information, and the casualty control manual. This manual sets forth the organization, procedures, and policies for the proper management of your maintenance efforts and resources. A properly established electronics division organization manual provides realistic guidance for all personnel within the division. As a senior ET, you will need to assist in updating and revising the organization manual when needed and should ensure that new personnel read it soon after they report on board. The organization manual reduces duplication of effort, prevents loss of information when personnel transfer, and establishes performance standards for you and the personnel of the electronics division.

To find additional information on running shipboard electronics repair organizations, you should review your Engineering Information Bulletins (EIBs) and Electronics Installation and Maintenance Books (EIMBs). You may also want to review various Department of the Navy, fleet, force, and type commander directives, instructions, and notices.

The Department of the Navy Directives Issuance System Consolidated Subject Index (NAVPUBINST 5215. 1) contains a list of notices and instructions. Some of these notices and instructions contain information that applies directly to the administration of an electronics repair organization. As a supervisor, you should be aware of this information and apply it as appropriate to your situation.

POLICY

Many of the administrative policies affecting the electronics division are important enough to be put in written form. You should be prepared to implement these policies, along with additional instructions of your own.

ADMINISTRATION

Your involvement in organizational and administrative actions is going to become more of a requirement, either directly or indirectly, as you advance to first class and chief. In this chapter, we will describe some of the duties and responsibilities associated with these actions. We will discuss areas such as general quarters and watches; supervision and assignment (administrative); reports and records; correspondence control; personnel manning; publications; and SCLSIS. We will also discuss your involvement in areas such as the 3-M Systems, inspections, maintenance periods, overhauls, alterations and modifications; safety; and the upkeep of your equipment and compartments.

GENERAL QUARTERS INSTRUCTIONS

Electronics division personnel are each assigned a general quarters station by the division watch, quarter, and station bills. Assignments of personnel should be practical and functional, as determined by the EMO. As an ET1 or ETC, you will be in a position to make recommendations to the EMO, and your experience and attitude will contribute much to the success of overall electronics casualty control (ECC).

Specific instructions for general quarters should be outlined in the electronics division organization manual and in the electronics casualty control manual. Procedures and applications should be a major part of electronics training. Chapter 5 of this TRAMAN provides more information concerning ECC.

IN-PORT WATCHES

The leading ET of each watch section is designated as the duty Electronics Technician and is directly responsible for the handling of all electronics casualties that may occur during periods outside normal working hours.

All technicians who are aboard, even though they may rate liberty, are considered to be on duty and may be called upon by the duty Electronics Technician at any time to assist in handling any electronics repair.

UNDERWAY WATCHES

Underway, a watch list is made up by the leading ET, approved by the EMO, and posted in the electronics workshop or office. All watches are stood according to this watch list and watch standing instructions. The technician on watch maintains station in the electronics workshop, except when called upon to handle a casualty, to supervise preventive maintenance, or to make inspections and tests.

The only reading materials authorized for use during underway watches are technical publications, manuals, and instruction books pertaining to some phase of electronics.

For sea details, equipment technicians are assigned to main areas where electronics equipment is operated (for example, CIC, main communications, and the bridge). The electronics workshop or office should be manned by a senior ET, who will receive and coordinate trouble calls. Other specific special sea details required by your ship type should be manned accordingly.

SUPERVISION AND ASSIGNMENT

Your duties and responsibilities above and beyond maintenance will involve making important supervisory and administrative decisions. These decisions concern personnel assignments, planning of workloads, and the prompt and proper completion of all paper work.

Supervision goes hand in hand with planning and the guiding of junior personnel. Proper supervision results in the proper employment of personnel. Today's ETs are well-trained technicians who have the right to expect their services to be used properly.

You must take the time to plan carefully and must supervise in a professional manner. Your efforts will result in the cooperation of junior personnel, thereby making your electronics division more effective.

REPORTS AND RECORDS

As you advance in rate, you will find that submitting periodic reports and maintaining personnel and equipment records will become a daily responsibility. Train yourself to be both proficient and efficient. Doing these reports and records in a proper and timely manner will allow you more time to complete your other duties. In other words, if you let the paper work pile up, you will be pressured for time and will probably do the reports hurriedly. Keeping up with the paper work daily will decrease your stress level and will yield a better management product for the Navy.

REPORTS

Even though the EMO is ultimately responsible for all division reports and records, the EMO will depend on your knowledge and performance for inputs to those reports and records. Some of the reports and records with which you should be familiar are described in the following paragraphs. These reports will be listed in your command's "Recurring Reports" instruction.

Trouble Reports

Trouble reports are used by operators and technicians to indicate electronic equipment problems or failures. They are generally used in conjunction with the electronics office or workshop trouble call log. The EMO or senior technicians make electronics maintenance assignments based on the priorities of the existing trouble reports. A trouble report system with a trouble call log and a trouble call/report sequential numbering system will assist you in tracking trouble reports and will be useful as a tool in ensuring proper

3-M documentation. For consistency, you should maintain a central point for receiving trouble calls (such as the EMO office or workshop). Each time an equipment trouble is detected, a separate trouble report should be submitted. It should state such information as the equipment affected, nature of the trouble, time of failure, originator's name, and other information appropriate to your electronics organization. When the trouble has been corrected, the originator should sign the appropriate block of the trouble report (or the Accepted by block of the OPNAV 4790/2K maintenance action form).

Eight O'Clock Reports

Eight o'clock reports are daily equipment status reports given to the commanding officer by the executive officer each evening at 8 o'clock (2000 hrs). At sea, the EMO usually will give the electronics division's eight o'clock report to the department head at least 1 hour prior to the eight o'clock reports. In port, the eight o'clock reports are given to the CDO by the duty departmental officers. As a senior technician, you must ensure that the information is current and accurate for your area of responsibility.

Traditionally, the eight o'clock reports are verbal reports of equipment status. However, because of the number of equipments on our ships today, a master sheet of equipments is usually made up in multiple-copy form. Applicable comments are made adjacent to the listed equipment on a daily basis. One copy of the equipment list is kept for the divisional file. The original is turned in for the eight o'clock reports. The following information is provided for each piece of equipment on the eight o'clock report:

- Whether the equipment is in an "up status" or "down status," with a statement of the nature of the problem
- Parts information (parts on board, parts not on board, and supply chit requisition number)
- Estimated time of repair for a "down" item
- Whether or not a Casualty Report (CASREP) will be necessary (If an equipment or system CASREP has already been made, the report includes the CASREP serial number for the applicable equipment or system.)

Casualty Reports (CASREPs)

As an electronics supervisor, you will often be in a situation that requires you to draft a CASREP message. The purpose and basic types of CASREPs are given in the following paragraph. Chapter 5 of this TRAMAN gives detailed information on the CASREP system.

The casualty report (CASREP) was designed to support the Chief of Naval Operations (CNO) and fleet commanders in the management of assigned forces. The effective use and support of Navy forces require an up-to-date, accurate operational status report for each unit. An important part of each operational status report is casualty information. The CASREP system contains four types of reports: INITIAL, UPDATE, CORRECT, and CANCEL. CASREPs are not a substitute for, but are in addition to and complement, 3-M data. The reference publication for CASREP information and procedures is NWP 10-1-10.

Getting Underway Reports

On most ships, the electronics division will be responsible for turning in an equipment status report (similar to eight o'clock reports) before getting underway. This report may be due any time between 72 hours and 24 hours before getting underway, depending on the requirements set by your TYCOM and command. This report usually includes major equipment status, estimated time of repair (ETR), power out/MDS readings from radars, and power out/receiver sensitivity readings from communications equipment. The getting underway report is usually given on a locally generated report form (checklist type), specifically for getting underway; however, it may be made on the same form as the eight o'clock report. (The report will vary from command to command.)

Anticipated Not Operationally Ready-Supply (ANORS) Reports

ANORS requisitions are used when a casualty is anticipated because of the lack of material. For example, suppose your air search radar's main output tube is expected to go bad within a short time and no spare tube is on board. The radar is still operational. However, since you anticipate that the tube will fail, you should submit an ANORS requisition. Afloat Supply Procedures, NAVSUP P-485, describes the use of the ANORS requisition.

Defective Material Reports

Reporting of defective materials obtained through the supply system is covered in NAVSUP P-485. The Navy uses a report of discrepancy (ROD) or quality deficiency report (QDR) to report supply discrepancies. An ROD is used to report shipping or packaging

discrepancies caused by the shipper. Included in this category are shortages, unacceptable overshipments, unacceptable substitutes, material shipped in error, shipment of wrong items, and missing or improperly prepared supply documentation. Also included are shelf-life items that were too old at the time of issue or were issued with insufficient shelf-life remaining. A QDR reports defective material that is not suitable for its intended use because of a deficiency in design, material, or procurement. These deficiencies can include chemical, electrical, functional, or physical discrepancies that occurred because the contractor did not meet contractual or specification requirements. It may also include deficiencies that resulted because the contractual requirements (including the procurement document that describes the technical requirements of the material) were ambiguous, improper, incorrect, or omitted. The QDR is reported to the Fleet Material Support Office (FMSO); the ROD is reported directly to the Navy stock point that issued and shipped the material.

Survey Reports

A survey is the procedure required by U.S. Navy regulations when naval property must be condemned due to damage, obsolescence, or deterioration; or acknowledged as nonexistent due to loss, theft, or total destruction. The survey is performed according to N4VSUP P-485.

Additional Reports

There are many other reports not mentioned in this chapter; for example, the reports required by type commanders and other authorities.

To increase the effectiveness of recurring reports and to avoid duplication, the Navy instituted the Reports Control Program. This program is used in the various naval commands and offices, in the Marine Corps, in each continental naval area, and in selected major field activities. Direct responsibility for the program is vested in the Chief of Naval Operations (OP 09B83).

RECORDS

Certain records are necessary to assist electronics personnel in keeping up-to-date information on equipment for which they are responsible.

As an electronics supervisor, you must ensure that all of your required records are maintained properly. To do this you should keep file copies of required reports. In addition, you should maintain files on the following topics:

- Equipment
- System
- Safety
- Inspections
- Pre- or post-overhaul
- 3-M Systems
- Personnel

The above list is not a complete list, but should give you an idea of the type of records that you should maintain. Have the records filed neatly and in an orderly sequence. Purge them of any information that is not required or will not be needed for reference. For example, throw away 3-year-old information that is no longer applicable.

Regulations concerning the use of records and instructions are contained in the following references:

- *Naval Ships' Technical Manual,* chapters 090 and 400
- NAVSEA SE000-00-EIM-100 (formerly NAVSEA 0967-LP-000-0100), *Electronics Installation and Maintenance Book, General*
- OPNAVINST 4790.4, *Ships' Maintenance and Material Management (3-M) Manual*
- Type commanders' instructions on required records and command inspection guides

CORRESPONDENCE CONTROL

A method of keeping track of correspondence and of routing information is important to any maintenance shop. Over a period of a week a large amount of correspondence enters and leaves the average work center. Some of this correspondence requires action, while some contains information for work center personnel. Ensuring that information is routed to the personnel of your work centers can be either a major chore or a simple everyday task. No simple procedures can help you simplify the job of keeping track of your correspondence:

1. Routing procedures
2. Correspondence tickler file

ROUTING PROCEDURES

Each work center should have an organized procedure for routing correspondence to shop personnel. All correspondence that enters a work center should have a routing sheet such as the one shown in figure 2-1. This simple routing sheet allows you, the shop supervisor, to keep track of who has read the particular correspondence. Use the second column (to the right of the individual names) to what action each person must take. If the correspondence will be in effect for a long time (OPNAV instruction, EIB, and so on), tile it in the shop for use as a reference. After the correspondence has completed its routing, keep the routing slip to provide you a list of shop personnel who have seen the correspondence.

CORRESPONDENCE TICKLER FILE

A correspondence tickler file is system for keeping track of the action taken on all correspondence entering a work center. Figure 2-2 shows an example of a tickler file card for an action required by EIB-E15 (23 Jul 84). The format of this file card is general enough that you can use it to keep track of any action to be taken or any report to be generated in your work center. The file card is the heart of the correspondence tickler. The tickler is made up of three parts:

1. An active file
2. A suspense file
3. A completed action file

OE DIVISION
OEØ1 ROUTING SHEET

TITLE: EIB-E15 (23 July 84)

NAME	REQD	DATE IN	DATE OUT	INITIAL
ET1 BARMAN	R		8/12/84	JB
ET2 SWEET	I			
ET2 BALABUSHKA	A			
ET2 HURLBUTT	I			
ET2 JENNINGS	I			
ET3 MORGAN	I			
ET3 JONES	A			
ET3 JACKSON	I			
ET3 MYERS	I			

REQD legend; I - Information
A - Action
R - Retain

Upon Completion, Return to ETI Barman

Destroy
File

OPS/OE Form No. XXXXXXXXX

Figure 2-1.–Sample work center correspondence routing sheet.

Active File

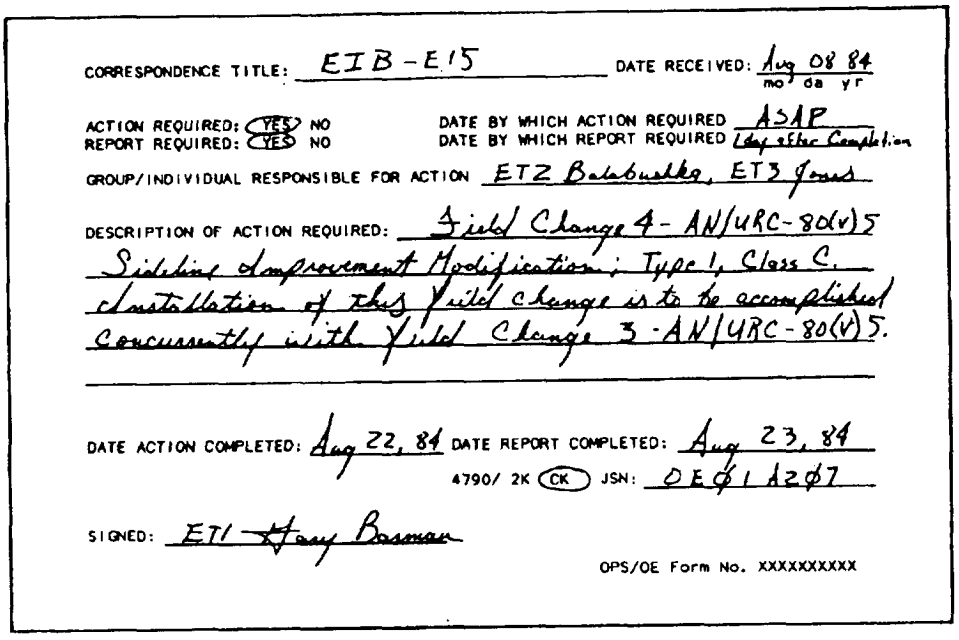
The active file is made up of tab cards. There is a numbered tab card for each day of the month, plus a card with the name of the month. As correspondence comes into the shop and action is required, fill out a tickler file card and place it behind the month-date card corresponding to a date 2 or 3 days before the date you must complete the report or action. (Examples of actions needing a tickler card are installation of a field change, or a report on, or inventory of, test equipment.) Each day before quarters, you can check the active file to see if there are any pending reports or actions that must be completed in the next 2 or 3 days. This keeps deadlines from creeping upon you and helps you avoid the "panic mode" of operation.

Suspense File

Put a tickler file card in the suspense file when you cannot complete an action or report because of one or more of the following reasons:

- Lack of material
- Lack of personnel
- Ship's operations
- Insufficient data
- Technical assistance required
- Other similar reasons

Your suspense file should contain tab cards with titles that indicate the reason each action was deferred. If, in the case of a field change, you require additional material or technical assistance and will not be able to complete the field change within 30 days, you must submit a deferral (OPNAV 4790/2K) via the maintenance data system (MDS). Note this on the tickler file card. When the problem that caused you to suspend the action or report is corrected and you have completed the


CORRESPONDENCE TITLE: EIB-E15 DATE RECEIVED: Aug 08 84 (mo da yr)

ACTION REQUIRED: (YES) NO DATE BY WHICH ACTION REQUIRED ASAP
REPORT REQUIRED: (YES) NO DATE BY WHICH REPORT REQUIRED Day after Completion

GROUP/INDIVIDUAL RESPONSIBLE FOR ACTION ET2 Balabuszka, ET3 Jones

DESCRIPTION OF ACTION REQUIRED: Field Change 4 - AN/URC-80(V)5 Sibling Improvement Modification; Type 1, Class C. Installation of this Field change is to be accomplished Concurrently with Field Change 3 - AN/URC-80(V)5.

DATE ACTION COMPLETED: Aug 22, 84 DATE REPORT COMPLETED: Aug 23, 84

4790/ 2K (CK) JSN: 0E01A207

SIGNED: ETI Tony Bosman

OPS/OE Form No. XXXXXXXXXX

Figure 2-2.–Sample correspondence tickler file card.

action or report, place the tickler file card in the completed action file.

Completed Action File

The completed action file contains all of the correspondence tickler file cards on which action has been completed. It serves as your record of actions you have taken or reports you have completed. Store routing slips in the completed action file by attaching them to their matching correspondence tickler file card. Annotate the serial number of a reporting letter or the JSN of a completed 4790/2K or CK on the bottom of the correspondence tickler file card for use as a future reference.

PUBLICATIONS

You have probably had to research, read, or use various publications during your career as an ET. Your reliance on and use of publications will increase as you advance in rate because you will be more directly involved in planning, inspections, reports, and so on.

Today, there are more changes to procedures because of the ever-increasing sophistication of our fleet. In addition, many of our traditional procedures are out-of-date in today's situations. As a result, we need to read current publications and keep them for use as reference material as we work with new technologies.

REQUIRED PUBLICATIONS

Required publications are not listed in this chapter. However, you can find them listed in the TYCOM Administration and Material Inspection Lists; the *Electronics Installation and Maintenance Book (ELWB), General* (NAVSEA SE000-00-EIM-100); and *EIMB, General Maintenance* (NAVSEA SE000-00-EIM-160).

The first step is to see what publications your division has and if they are useful, up-to-date, required, and so on. After you know what publications you lack, see if another division has them or place them on order as soon as possible.

Keep only the number of copies you really need, because storage space on a ship is scarce. In addition, if you have too many pubs, updating or making changes to them can be quite a problem. Maintain a master publication inventory (with locations of individual pubs noted). Also, for each subject publication in the electronics division, maintain a file card, such as the

one shown in figure 2-3 (OPNAV 5070/11). These record cards will help you efficiently maintain an up-to-date and complete inventory of publications.

TECHNICAL LIBRARY

Whether you are on a small or large ship, some type of division technical library for technical pubs, reference pubs, training pubs, handbooks, and so on, should exist.

Besides the publications already mentioned, your tech library should have at least one up-to-date copy of each applicable equipment (and systems) technical manual.

Assign at least one petty officer to maintain the division's ready reference library (tech library). Assign a second person as a backup so that your tech library will stay current if the assigned tech library petty officer is absent.

VALIDATION AND INVENTORY

Just as with other publications, you should have a master inventory of the tech library publications. The publication record and inventory card, OPNAV 5070/11 (fig. 2-3), will help the tech library petty officer keep track of publications (issued, on hand, and so on). When changes to publications arrive, you can consult the record cards for the location and quantity of publications requiring changes. In this way you can ensure that all your publications receive changes as they should.

As publications become unusable because of extensive wear and damage, order new publications (and changes) to replace them. Issue these replacements to work center personnel as necessary to avoid confusion; be sure the old publications are discarded after the new publications have been received. (Be sure to abide by security regulations as you discard publications.)

There are several methods used in setting up and maintaining a tech library. Publications NWP-0 and the *IMA Library Guide* (S8800-00-GIP-000) pertain to major technical libraries. However, applicable sections of the manuals may help you with your local situation.

Another problem of maintaining publications is keeping them updated. Of real help to you will be the *Navy Stock List of Publications and Forms*, NAVSUP 2002, and the Enhanced-Ships Technical Publications System (E-STEPS) products.

The NAVSUP 2002 is a master set of microfiche, issued quarterly, that lists most Navy publications and forms. Each edition supersedes and replaces the entire previous edition. The NAVSUP 2002 contains three major sections:

1. Forms
2. Publications
3. Naval technical directives

This microfiche set provides status information such as "canceled," "canceled-no superseding stock numbers," "canceled-incorporated in basic stock number," "replaced by," and effective dates.

The Enhanced Ships Technical Publications System (E-STEPS) is also a master set of microfiche. Several E-STEPS data products contain information concerning technical documentation supporting general documents; ships' selected records; ships' electronics; hull, mechanical and electrical (HM&E) and ordnance systems; and equipments under the cognizance of the Naval Sea Systems Command (NAVSEA) and the Space and Naval Warfare Systems Command (SPAWAR). *The Publication Applicability List* (PAL) is one of the products of E-STEPS. This microfiche set is used to determine the publication needs of the ship/shore station to which it applies. The PAL is an important key to identifying the technical manual you need. It applies to NAVSEA and SPAWAR technical manuals for systems and equipments reported to be installed on your ship. The PAL lists publications that apply to, but are not required for, your ship.

Another publication you will need for operating a technical library is the *Technical Manual Identification Numbering System (TMINS)* Application Guide and Index, M0000-00-IDX-000/TMINS. This publication is the sole reference handbook for all component commands involved with the composition, construction, interpretation, or assignment of technical manual or associated technical document identification numbers. This guide will help you understand how the TMINS numbers apply to the new publication numbering system.

A publication used to find current listings for instructions by Washington, D. C., headquarters organizations is the *Department of the Navy Directives Issuance System Consolidated Subject Index,* NAVPUBINST 5215.1. This index has a listing of instructions issued by Washington, D. C., headquarters organizations. It is a numerically indexed and divided

(FRONT SIDE)

SHORT TITLE

COPY NUMBERS ON HAND

1 2 3 4 5 6

CLASSIFICATION OF PUBLICATION

LONG TITLE

EFFECTIVE DATE

CHANGE OR CORRECTION	DATE OF ENTRY BY COPY NUMBER									
	1	2	3	4	5	6	7	8	9	10

NWPL CATALOG CARD OPNAV5070/11 (Rev. 9-75) S/N 0107-LF-050-7055

A

(BACK SIDE)

OPNAV 5070/11 (Rev. 9-75) BACK

DISPOSITION OF PUBLICATION

COPY NO.	HOLDER (Signature)	LOCATION	REC'D DATE	RETURN DATE	DESTRUCTION	
					DATE	AUTHORITY

REMARKS

B

Figure 2-3.–Publication record and inventory card (5x7) OPNAV 5070/11.

by subject to aid in identifying active naval instructions. The index is divided into four sections:

1. Alphabetical listing–lists instructions by subject content
2. Numerical listing–lists instructions first by sponsor, then in numerical sequence
3. Recently canceled and/or superseded instructions–lists all instructions recently canceled by the sponsor
4. Navy implementation of Department of Defense (DOD) issuances–provides a cross-reference listing to assist activities requesting DOD issuances

MAINTAINING TECHNICAL MANUALS

Maintaining your technical manuals so they are up-to-date is as important as maintaining any other valuable tool. Your technical manuals must reflect the actual equipment configurations that you have at your command. An out-of-date manual or a manual that does not reflect any changes that may have been made to your equipment may prove to be useless when you try to isolate problems.

Changes or update information you receive to NAVSEA technical manuals will be in one of three forms: 1) Advance Change Notice (ACN), 2) Permanent Change, or 3) Revision. After receiving any change or update to a tech manual, you should first ensure that the Field Change, ORDALT, SHIPALT and so forth, is installed in your equipment. If you indicate a change in a manual that is not made in the equipment, the manual will be incorrect. Making an incorrect change to a technical manual is as bad as not making a change when one is required.

Advance Change Notice (ACN)

An ACN is issued when there is an urgent need to add, correct, or expand information in a technical manual to prevent injury or death to personnel or damage to equipment. The ACN is issued by the responsible NAVSEA technical activity in response to a known need for immediate corrective action.

An ACN may be issued as a naval message, a letter, a NAVGRAM, or in an Engineering Information Bulletin (EIB).

When you receive an ACN, you should do the following:

1. Determine whether or not the ACN applies to your technical manual.
2. If it does apply, enter the changes into your technical manual.
3. Record the entry on the Record of Changes page.

Permanent Change

Permanent changes are issued to add system or equipment configuration variations and new procedures and to change existing procedures. They are also used to highlight outstanding ACNs and to correct other reported deficiencies.

Most permanent changes to technical manuals are identified by a vertical line, known as a change bar, extending along the margin of the changed material. When changes to an entire part, chapter, or section are made, a change bar will not be present.

When you receive a Permanent Change, you should take the following steps:

1. Determine whether or not the change applies to the technical manual for your system/equipment configuration.
2. Check the Permanent Change Package against the Change Instruction Sheet and the List of Effective Pages to be sure you have a complete set of change pages.
3. Add replacement pages and new pages, and remove replaced pages according to the instructions that come with the change package.
4. Record the entry on the Record of Changes page.
5. Destroy the removed pages according to your local disposal instructions.
6. Insert the Change Instruction Sheet immediately following the title page.

Revision

A revision is a second or later edition of a technical manual. A revision is issued whenever it is necessary to change the majority of pages in an existing manual. A revision may be required because of hardware modification, because of a deficiency that affects a large part of the manual, or because a change of system configuration results in one volume or part of a multivolume or multipart set being revised.

When you receive a technical manual revision, you should:

1. Verify that the revised manual applies to your ship, system, or equipment configuration.

2. Destroy any superseded edition according to your local disposal procedures.

As supervisor you should ensure that the personnel who manage the technical library, or function as technical manual coordinators for the work centers, should be knowledgeable, responsible, and willing to help others. It is a job for personnel who understand the value of tools, the need to safeguard them, and the need to place them in the hands of the users who need them. Such management will play a vital role in maintaining the operational readiness or your command.

In this chapter we were unable to give all the information you will need on the job. But we have tried to provide basic information and references to help you maintain a good reference technical library.

PERSONNEL MANNING

Personnel manning will be a prime concern of the EMO; however, you will more than likely be quite involved with personnel manning within your division. A division must have the correct manning levels to function properly, filling the needs of equipment maintenance and other shipboard functions, such as general quarters watch stations. Manpower requirements are normally accounted for by the Navy manpower requirements system (NMRS).

This section of the chapter will give you a background in Navy manning and the personnel "tools" with which to work.

THE SHIP MANPOWER (MANNING) DOCUMENT (SMD)

To effectively manage manpower and personnel, the Navy needs an accurate identification of ship manpower requirements. The main function of the ship manpower document (SMD) and preliminary ship manpower document (PSMD) programs is to document manpower requirements. This is done in terms of quantity and quality (such as skills, experience levels, and specialized training), required to perform mission requirements specified in the required operational capabilities (ROC) and projected operational environment (POE) statements.

An ROC statement lists all required operational capabilities (ROCs) for a class of ships, a type of aircraft squadron, or other unit as assigned by the CNO.

Example:

ROC
1. Engage submarines with antisubmarine armament.
2. Engage airborne threats using surface-to-air armament.

SUBROC
1. Attack with torpedoes.
2. Engage airborne threats using installed AA weapons.

A POE statement is a listing of the most demanding conditions (wartime and peacetime) of operation for which a unit must be manned.

Example: At sea in wartime, capable of performing all offensive and defensive functions simultaneously while in Readiness Condition 1; capable of performing other functions that are not required to be accomplished simultaneously.

The SMD is developed in six phases: data collection, workload standards development or validation, generation of a preliminary statement of required billets, fleet review, publication of final billets, and implementation. The Navy manpower requirements system provides automated data processing support for each of these phases.

If a ship is modernized during its service life (equipment or systems updated or added), the SMD provides a means for determining manpower requirements for the modified systems or mission.

The NMRS can generate an SMD to identify billets needed to operate and maintain new weapons, equipments, and systems, far enough in advance of fleet introduction to provide trained personnel both when and where they are needed.

In addition, the shipboard managers–from the commanding officer down to the LPOs–can use the SMD as an effective source document. Since it has detailed watch station requirements, it can serve as the basis for the establishment of a battle organization and watch bill for specific conditions of readiness.

DESCRIPTION OF THE SMD

We have discussed the importance of the SMD as an element of the Navy manpower management process. It presents the basic manpower requirements summary in seven sections as follows:

Section I — Officer billet summary. Consol- idates officer requirements into a single section.

Section II Manpower summary. Shows the number of officer, enlisted, and civilian manpower requirements at the deprtmental level.

Section III Manpower requirements. Displays the ship manpower requirements by organizational component.

Section IV Battle bill. Shows watch station requirements for each condition of readiness prescribed in the required operational capaility (ROC) and projected operational environment (POE) statements.

Section V Functional workload. Provides a summary of all workloads, by category, that contributed to the billet requirements in each organizational component.

Section VI Divided into three parts as follows:

Part O I-Summary of officer manpower requirements. Provides a summary of officer billets by designator and paygrade along with totals for both. (These are shipwide and not related to organizational components.)

Part 02–Summary of enlisted manpower requirements. Similar to Part 01, but more detailed. This section includes a summary for each rating group (for example, DS, ET, FC, OS, and RM) in alphabetical order, showing primary and secondary NECs and paygrades. At the end of the section, there is a summary for the entire activity summarized by paygrade only. As in Part 01, the totals and subtotals are shipwide and not related to the organizational structure. See figure 2-4.

Part 2A–Summary of enlisted manpower requirements by department.

SECTION VI (PART 02) OPNAVINST 5321.43S
SUMMARY OF ENLISTED MANPOWER REQUIREMENTS 29 JUN 1981

FOR

USS NEVERSAIL (DD 123)

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DISG STKR	1-3	1-2	1-1	TOTAL
DK						1			1				2
RATING TOTAL						1			1				2
DS	1615	9535			1								1
DS	1623							1					1
DS	1672						3						3
DS	1682					1		1					2
RATING TOTAL					1	1	3	2					7
EM					1		1	1					3
EM	4626					1		1					2
RATING TOTAL					1	1	1	2					5
EN					1		1	4	2				8
EN	4291					1		1					2
EN	4398					1	1						2
RATING TOTAL					1	2	2	5	2				12
ET		9535		1									1
ET	1426	1454					1						1
ET	1431	1425					1						1
ET	1436	1422						1					1
ET	1438	1453					1						1
ET	1453	1454						1					1

PAGE VI - 3

Figure 2-4.–Sample page from ship manning document (Section VI [Part 02]).

Summarizes paygrades by each organizational component showing the totals for each division and department. There is a single- line entry for each skill level (rating, paygrade, primary NEC, and secondary NEC) at the division level. Each department starts at the top of a new page.

Section VII Summary of organizational manpower requirements. A three-part section that summarizes and displays billet information contained in previous sections.

Part I–Shows the officer, chief petty officer (E-7, E-8, and E-9), and other enlisted billets in the document.

Part II–Shows the apportionment of enlisted skills by paygrade, including petty officers (E-4 and above), designated strikers (for example, DSSN, ETSN, and FCSN), and nonrated personnel (for example SN and FN).

Part III-Shows paygrade summary of all enlisted billet requirements on a shipwide basis. This summary is identical to that shown at the end of Section VI (Part 02).

MANPOWER AUTHORIZATION (MPA)

Even though you will probably not be directly involved with manpower authorization changes, you should have some knowledge of manpower authorization.

The SMD (ship manpower document) discussed earlier is the basis for the Manpower Authorization (MPA), OPNAV 1000/2 (fig. 2-5). Proper classification of authorized billets is extremely important in defining the Navy's overall manpower requirements. The numbers of billets throughout the Navy are summed by the various classification categories. These figures provide the basis for recruiting, training, and promoting Navy personnel.

OPNAV 1000/2 (REV. 9-82)
CHIEF OF NAVAL OPERATIONS
DISTRIBUTION LIST

MANPOWER AUTHORIZATION

FOR DETAILED DESCRIPTION OF ENTRIES, REFER TO OPNAVINST. 1000.16 (SERIES)

DATE: 08/02/90 PAGE: 34

ACTIVITY CODE	ACTIVITY NAME	UIC	CLAIMANT	SAIC	HOMEPORT GEOGRAPHIC LOCATION	RSPN	AG SAG	S S	CFS	DSA	MCA	TRANSACTION NUMBER	TRANSACTION DATE
						01	M6MS	1	05	C4	B	EBRL UV	08/02/9

Billet Position Title	Des Gr Rate	PNOBC PNEC	CSR	BA	FY90	FY91	FY92	FY93	FY94	FY95	SR	M+1	M+2	M+3	M+6	M+12
	DSCS	1615		1	1	1	1	1	1	1		1	1	1	1	1
	DSC			2	2	2	2	2	2	2		2	2	2	2	2
DS TOTALS				3	3	3	3	3	3	3		3	3	3	3	3
	DTC			1	1	1	1	1	1	1		1	1	1	1	1
DT TOTALS				1	1	1	1	1	1	1		1	1	1	1	1
	EAC			2	2	2	2	2	2	2		2	2	2	2	2
EA TOTALS				2	2	2	2	2	2	2		2	2	2	2	2
	EMCS			1	1	1	1	1	1	1		1	1	1	1	1
	EMC			1	1	1	1	1	1	1		1	1	1	1	1
EM TOTALS				2	2	2	2	2	2	2		2	2	2	2	2
	ENCS			1	1	1	1	1	1	1		1	1	1	1	1
	ENC			1	1	1	1	1	1	1		1	1	1	1	1
EN TOTALS				2	2	2	2	2	2	2		2	2	2	2	2
	EOCS			1	1	1	1	1	1	1		1	1	1	1	1
	EOC			1	1	1	1	1	1	1		1	1	1	1	1
EO TOTALS				2	2	2	2	2	2	2		2	2	2	2	2
	EQCM			1	1	1						1	1	1	1	1
EQ TOTALS				1	1	1						1	1	1	1	1

Figure 2-5.–Sample page from the Manpower Authorization.

The Navy must produce the maximum combat readiness with the dollar resources available. For this reason, and because of the high cost of manpower, each billet requirement must be stated at the minimum skill and experience levels necessary for satisfactory performance of billet functions.

Billet reviews are conducted periodically at the CNO level. In these reviews, decisions are made based upon the existing classification of each billet as indicated on Manpower Authorizations (OPNAV Form 1000/2, previously explained.) Improperly classified billets become the lowest priority billets in the category in which they are classified. Consequently, if the objective is to delete or redistribute billets, improperly classified billets are prime candidates for deletion or reprogramming.

The manpower requirements and manpower classifications within each Navy activity are specifically reviewed at the activity level annually to ensure the deletion of unnecessary billets or positions and the proper classification of each authorized billet or position. If changes are required, a Manpower Authorization Change Request (OPNAV 1000/4A) is submitted. If changes to the designator rating, grade, or number of billets and/or positions are requested, the requests must be justified in terms of changes in mission, function, and task, as contained in the required operational capability (ROC) or shore required operational capabilities (SHOROC) statement. If a billet is currently classified improperly, the misclassification must be explained.

Manpower Authorization Change Requests are normally submitted annually. More frequent requests must be justified on the basis of changes in mission or functions beyond the control of the activity.

Valid requirements for billet changes that will require the movement of personnel must be identified and requested as early as feasible to permit orderly personnel management. Normally, 5 to 9 months' time is required after final billet approval before new or changed billets can be filled with personnel. Manpower Authorization Change Requests that involve an activity reorganization are planned and submitted on the basis of the existing number of billets.

The Billets Authorized (BA) column on the MPA (refer to fig. 2-5, block 32) indicates the billets authorized by the CNO. The quantity assigned to each billet authorized on the MPA is normally the same as the corresponding billet in the SMD. SMD billet requirements, which are not included in the Billet Authorized (BA) column on the MPA, are entered on the MPA as Mobilization Billets, the majority of which will be reflected in the Selected Reserve column (SR - block 39).

What does all of this mean to you? You as a supervisor, play a very important part in the process. You must continually work with your personnel specialist to ensure that billet and personnel requirements for your shop are accurately reflected in ship manning documents. By keeping your shop's manning requirements up to date, you will help to keep your ship's manning requirements up to date.

Check the MPA to ensure that all of the Navy enlisted classifications (NECs) listed in the MPA that pertain to your shop are current and correct. It is especially important to make sure that the NECs required to support new installations are requested and that old NECs no longer required are deleted. Have a Short Form Change Request to the MPA submitted when you find a discrepancy.

Whenever you work with the MPA, use OPNAVINST 1000.16, *Manual of Navy Total Force Manpower Policies and Procedures* as a reference. Article 903 contains all of the information and procedures necessary to initiate a Short Form Change Request (military only).

ENLISTED DISTRIBUTION AND VERIFICATION REPORT (EDVR)

An EDVR is a statement of an activity's personnel account–how many assigned, what rates, what NECs, and so on. The Enlisted Personnel Management Center (EPMAC) publishes an up-to-date EDVR for every command monthly. You will see and use the EDVR often, more so than the MPA or SMD. As an ET1 or ETC, you will work closely with the EMO to determine NEC manning and personnel losses and gains, and to initiate any necessary changes to the EDVR.

The purpose of the EDVR is to provide

- a rate or NEC summary of the current and future manning status of the activity,
- a common reference point in any discussion of manning status between the manning or detailing control authorities and the activity,
- a statement of account for verification by the activity, and
- a permanent historical record at the Bureau of Naval Personnel (BUPERS) of an activity's

personnel account for statistical uses and overall Navy manning.

The EDVR printout is divided into nine sections. Sections 1 through 3 contain information on members that has been extracted from the activity account and that requires special attention or action by the activity. Section 4 contains the total personnel account of the activity, including those members reflected in sections 1 through 3. Sections 5 through 8 contain only statistical and authorized billet information. Section 9 contains information about NEC management; it lists names and up to five NECs that the service member may hold.

The following list will provide you with a basic description of each section of the EDVR:

Section 1. Prospective Gains (PG). Lists all members who have currently been ordered to report to your activity within the next 7 months.

Section 2. Prospective Losses. Lists all members who should have been detached or are expected to be detached from the activity within the next 7 months. Career and noncareer EAOS (end of active obligated service) losses are also listed.

Section 3. Personnel On Board for Temporary Duty or Assigned in a Deserter Status.

Section 4. Total Personnel On Board and Rating NEC Summary. Lists all members in the activity's personnel account, regardless of their loss, gain, or duty status. When a member also appears in one of the three preceding sections, the section in which the member is listed is displayed in item AA of the EDVR. See figure 2-6.

Section 5. Personnel Status Summary. A numerical summary of the activity's personnel account showing authorized billets, the

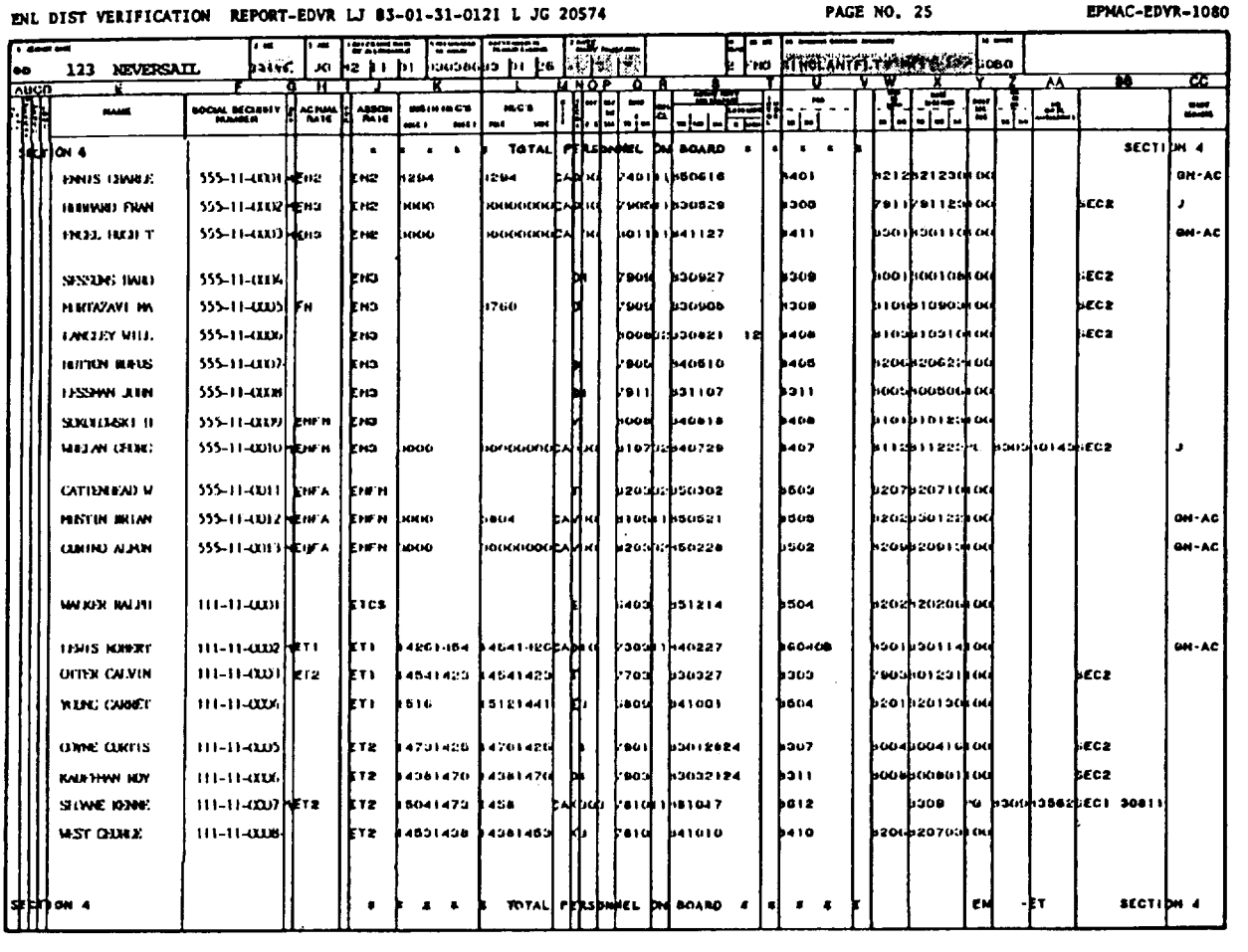


Figure 2-6.–Example of EDVR format (Section 4).

Navy manning plan (NMP), and members on board the activity.

Section 6. NEC Summary. A summary of an activity's authorized NEC billets and the members on board or expected on board who possess those NECs.

Section 7. CNO Billets Authorized Revision Number XXXXX dated yr/mo/da. The information contained in this section is identical to the Summary of Organizational Billets appearing in the activity's Manpower Authorization (MPA) OPNAV Form 1000/2.

Section 8. NEC Billet/Personnel Inventory. Lists NECs for which the activity has authorized billets and members who hold these billets.

Section 9. NEC Management Section. Lists the names of the activity's personnel who hold NECs, and lists up to five NECs per individual.

As a supervisor, you should learn to read and use the EDVR. It will provide you valuable information to use in providing proper manning for your ship. The format and procedures for validating the EDVR are shown in NAVMILPERSCOMINST 1080.1.

MAINTENANCE MATERIAL MANAGEMENT (3-M) RESPONSIBILITIES

By this point in your career, you should have an extensive knowledge of the 3-M Systems and should follow their requirements automatically. As an ET1 or ETC, you should know the full use of the 3-M Systems and must ensure that your personnel comply with the 3-M Systems requirements.

To review the mechanics of the 3-M Systems, we recommend that you read the "Ships 3-M Systems" chapter of the *Military Requirement for Petty Officer Third Class* once again. This particular chapter of the *Military Requirements for Petty Officer Third Class* provides an excellent description of the 3-M Systems; however, the official reference for the 3-M Systems is OPNAVINST 4790.4. You may also wish to read *lntroduction to 3-M Systems,* NAVEDTRA 13092. This text gives a short, but very informative explanation of 3-M Systems and procedures.

SHIP CONFIGURATION AND LOGISTIC SUPPORT INFORMATION SYSTEM (SCLSIS)

The structure of a ship, defined in terms of onboard systems and equipment, is referred to as the ship's configuration. The ability to define a ship's configuration accurately is critical in maintaining proper shipboard support. Navy managers responsible for the operation, maintenance, modification, and logistics support of both ships and equipment need to receive accurate configuration data in a timely manner. To ensure the availability of this data, many Navy managers in the past developed their own information systems for gathering and processing configuration data. While those systems satisfied specific requirements, each required maintenance and organizational support. The multiple systems also imposed redundant reporting responsibilities on the fleet. Managers who lacked the resources to develop their own configuration information system were forced to collect data from the several existing systems. This produced inconsistent results and interface problems because of different program languages or equipment incompatibilities. The need to provide all managers with a single, standard source of accurate ship configuration data and to reduce fleet reporting to a single requirement led to the development of the Ship Configuration and Logistics Support Information System (SCLSIS).

SCLSIS replaced the CNO-sponsored program, Ship Equipment Configuration Accounting System (SECAS), in 1989. SCLSIS applies to all ships of the active and reserve fleets, except for fleet ballistic missile submarines (SSBNS) and nuclear propulsion systems. It covers the life cycle of the ship, starting during its construction.

Department of the Navy Configuration Management Policy, SECNAVINST 4130.2, assigns to the Naval Sea Systems Command (NAVSEA) the responsibility for maintenance and control of ships configuration data, including related platforms, systems, and equipments. It also requires that a single activity be designated as the ship class control authority for configuration data input and changes to the Weapon Systems File/Ship Configuration and Logistic Support Information (WSF/SCLSI) Database. The WSF/SCLSI Database is maintained by the Ship's Parts Control Center (SPCC) in Mechanicsburg, Pennsylvania.

The term *weapon systems file* refers to the parts level, parts inventory portions, and related secondary ship component level configuration data files of the

Weapon Systems File (WSF). The SCLSI database, which was formerly the WSF Download database, is the master configuration file for all Navy ships.

SCLSIS Data Input Path

Data is put into SCLSIS according to 3-M reporting procedures. The data flow is from the ship to the TYCOM and then to the Central Data Exchange (CDE) at the Naval Sea Logistics Center (NAVSEALOGCEN). The CDE consolidates the configuration and logistics data and routes it to the appropriate Configuration Data Manager (CDM). Figure 2-7 shows the SCLSIS data flow for an operational ship.

The CDM is the single activity responsible for the accuracy and maintenance of the configuration data for a ship class. All data entries into the WSF/SCLSI database are made directly by the CDM. The CDM conducts any research necessary on information submitted for inclusion in the database and then updates the SCLSI database.

As custodian of the SCLSI database, SPCC processes transactions as directed by the CDM, calculates allowance changes and extracts related supply support information. All SCLSI database updates, whether initiated by the ship or the CDM, cause an output from the SCLSI database to go to the ship. SPCC also passes back to the ship all supply support changes, including new and revised Allowance Parts Lists (APL), and National Item Identification Number (NIIN) changes. Response to Coordinated Shipboard Allowance List (COSAL) Feedback Reports are passed from the SPCC to the ship in the same process. In addition, the data base provides Shipboard Nontactical ADP Program (SNAP) databases and data to other fleet and shore activities who require authoritative configuration and logistics information.

Scope of SCLSIS

The scope of SCLSIS includes all configuration-worthy items necessary for the operation,

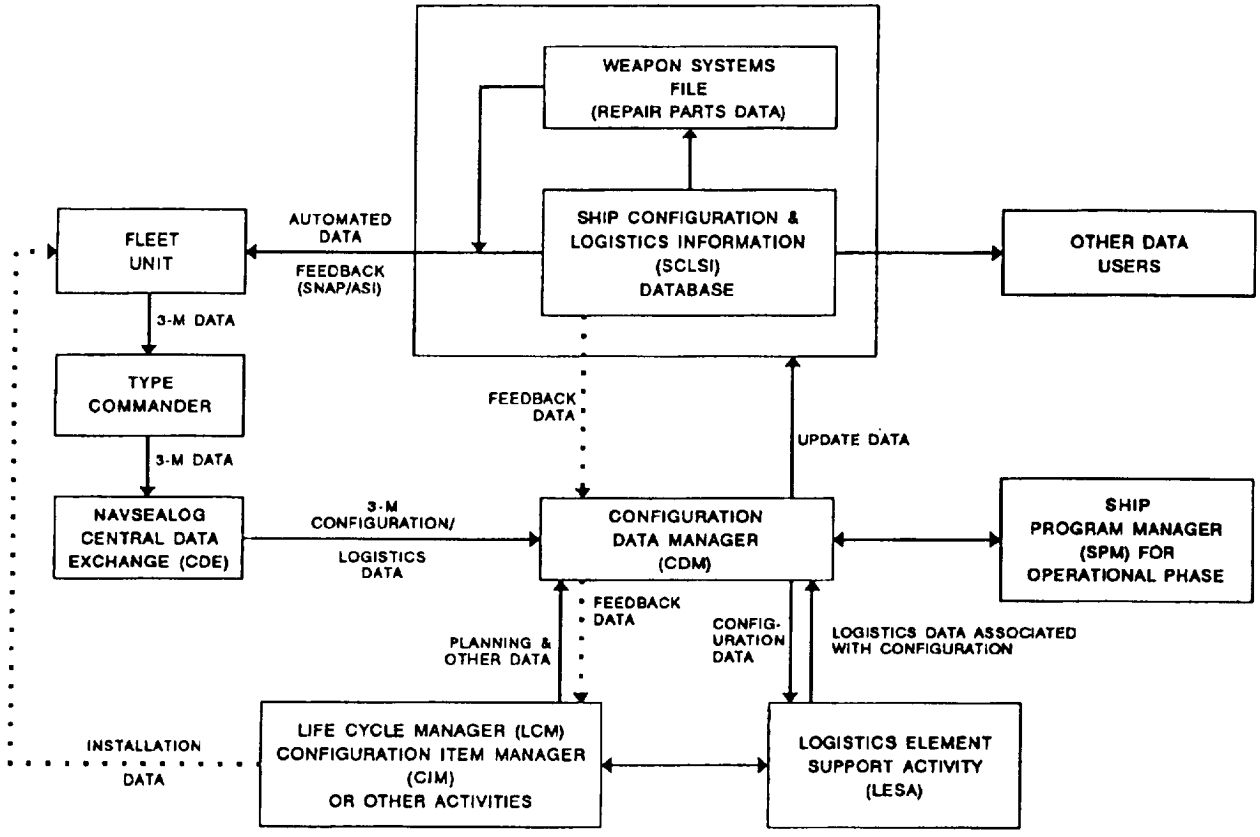


Figure 2-7.–SCLSIS Organizational Data Flow (Operational Ships).

maintenance, modernization, and support of shipboard equipment.

An item is considered "configuration-worthy" if

1. It requires any one of the following elements of logistics support: supply support, test equipment requirements, technical manuals and repair standards, Planned Maintenance System actions or drawings.
2. Configuration information (for example, nameplate data, technical characteristics data, component drawing) is required to support any level of maintenance (organizational, intermediate, or depot), and modernization (planning and execution).
3. It is needed to fully describe the functional hierarchy of the ship.

Within NAVSEA TECHNICAL SPECIFICATION 9090-700 series, which governs SCLSIS, ship configuration identification and data controls are divided into four Ievels of detail, kept as follows:

1. Ship Level Configuration. The Planning Yard maintains ship level configuration information with general arrangement drawings and various ship level records such as weight and stability analysis.
2. System Level Configuration. The Planning Yard maintains system level configuration information with system selected record drawings and configuration control drawings.
3. Component Level Configuration. The SPCC maintains component level configuration data, along with ship and system level configuration data in the SCLSI database.
4. Parts Level Configuration. The Life Cycle Manager (LCM) and the SPCC maintain parts level configuration data in the Equipment File of the WSF.

Validation and Audits

Validations and audits are basically inventories and are grouped into several basic categories. Each validation or audit may require various amounts of effort and time to complete. The basic validations and audit categories include:

1. Baseline Validation. An inventory process that compares, by type and serial number, what equipment is on board a ship with what supply documents indicate should be on board the ship. The purpose of the validation is to establish a data baseline against which future inventories and equipment changes can be compared. The baseline data accounts for original equipment configurations, as well as alterations. Baseline Validations are conducted for the first ships of a class and are used to produce the ship Class Standard Data Base (CSDB). Configurations for future ships of the class are based on the CSDB.
2. Audits. A sampling validation performed to ensure that configuration and logistics data in the SCLSI database is accurate.
3. Correction Validation. An inventory conducted on items flagged during a previous audit because of some identification or records problem. This includes follow-on Clarification Audits to identify further validation candidates needed to update the database.
4. Installation Validation. Verifies the cofiguration and logistics data being reported for new configuration item installations.

As a supervisor, you must remember to submit the proper 3-M documentation to the TYCOM when changes in the configuration of your shop equipment occur. This is the only way that the Configuration Data Manager will know to put the information on the SCLSI76 database. If the information is not on the database, you will not get the parts support you need to ensure proper repairs.

INSPECTIONS

Inspections of electronic equipment and digital data equipment systems are made at least once during each ship's training cycle and at other times when necessary. These inspections determine the state of readiness of equipment and compare its condition with a previously established condition to detect deterioration. They also help determine the readiness of equipment after it has been installed, overhauled, repaired, or altered.

INSURV INSPECTIONS

INSURV inspections are conducted by the Board of Inspection and Survey to determine the material readiness of the ship's equipment and systems. Any discrepancies or deficiencies discovered by the INSURV inspection team are documented on 4790/2K work requests. These work requests are then used in planning an availability or

overhaul. OPNAVINST 4730.5 requires an INSURV inspection for active ships at least once every 3 years.

TYPE COMMANDERS' ADMINISTRATIVE INSPECTIONS

Type commanders' administrative inspections are held at least once each training cycle and are divided into a whole ship category and a department category. Administrative methods and procedures are examined to see if they are intelligent and efficient. They are also checked to see if they are directed toward keeping the ship prepared for wartime mission performance.

MATERIAL READINESS INSPECTION

The purpose of these inspections is to determine the material readiness of shipboard equipment and systems installations. These inspections are conducted once during each ship's training cycle and are supervised by an officer who is qualified in the particular equipment or system. When practical, this officer will be assisted by an engineer finished by the systems command responsible for that equipment. In the interest of reducing costs and conserving manpower, these inspections are normally conducted concurrenty with, or as part of, the INSURV inspection.

The material readiness inspection consists of three specific types of inspections: performance inspections, physical inspections, and maintenance administration inspections.

The performance inspection includes, but is not limited to, the following actions:

1. Making the basic measurements listed on the MRC for the equipment and systems designated by the inspecting officer as essential to the primary mission and task of the ship being inspected.
2. Conducting system tests on designated systems at a test and calibration facility. If any of these tests are not done at the time or just prior to the inspection, they should be done shortly afterwards. In any event, additional measurements, as noted on system MRCs, should be taken at the time of the system test.
3. Conducting interference tests to determine if operating the equipment causes problems with other installed electronic equipment or if it is hampered by interference from other electronic or nonelectronic equipment. The interference tests also identify the source and amplitude of interference emanating from nonelectronic equipment.
4. Listing all approved modifications required but not made, as well as all unauthorized modifications.

The physical inspection includes visually inspecting and determining the condition and adequacy of all equipment, cabling, repair parts, and tools.

The maintenance administration inspection determines if there is an established Procedure for submitting SCLSIS and OPNAV 4790/2 and 4790/CK forms. Checks are also made to ensure that there is a procedure for listing field changes on field change plates and updating electronics publications.

This inspection includes, but is not limited to, checking whether the quantity and rates of electronics personnel on board meet the ship's allowance and whether the electronics personnel assigned to the ship are capable of supporting the allowed equipment. It also is used to see if there is an established program for on-the-job training (OJT) as well as a program for sending personnel to fleet and NMPC-controlled electronics schools.

TEMPEST INSPECTIONS

Compromising emanations, generally referred to as TEMPEST, are unintentional data-related or intelligence-bearing signals. These signals, if intercepted or analyzed, can disclose the classified information transmitted, received, handled, or otherwise processed by electrical information processing equipment or systems. Any electrical information processing device, whether an ordinary electric typewriter or a large complex data processor, may emit signals that can be intercepted and used to compromise security. The Navy holds TEMPEST inspections to measure these emanations and determine how they can be eliminated.

There are two types of TEMPEST inspections. One is the instrumented TEMPEST survey, an on-site (field) test to determine the nature and amplitude of conducted or radiated signals that may contain compromising (classified) information. A field test normally includes detection and measurement of these signals, and analysis to determine correlation between emanating signals and classified information being processed. A National Policy Certification is issued to the ship when the ship's equipment has been found to meet the requirements of the national policy. This permits the

ship to operate all its information processing systems according to prescribed procedures. Because of its cost, this survey is usually completed on only one ship of a class. The second inspection is the Visual TEMPEST Configuration Control Inspection (VTCCI), which is conducted independently or concurrently with the instrumented TEMPEST survey, to determine whether or not the shipboard secure electrical information processing systems are installed properly. Any change, however minor, within the secure electrical processing center, whether by forces afloat or the normal installation activity, must be made and inspected according to current criteria outlined in MIL-STD-1680.

PREOVERHAUL TEST AND INSPECTION (POT&I)

Preoverhaul inspections are held approximately 10 to 12 months before an overhaul. These inspections cover work on combat system items to be done during the upcoming overhaul. A preoverhaul inspection provides information used in developing plans for overhaul of the ship. Personnel performing this inspection are normally from the ship's home yard. Personnel from SPAWAR or NAVSEA may also perform part of the inspection.

POSTOVERHAUL INSPECTION

The purpose of the pxtoverhaul inspection is to furnish the commanding officer of the ship a report on the condition, capabilities, and limitations of the shipboard equipment and systems. This inspection includes new installations of equipment and systems, and the equipment or systems that were included in the overhaul job orders.

MAINTENANCE PERIODS, OVERHAULS, AND ALTERATIONS

Maintenance periods (also called availabilities) and overhauls are scheduled at various times according to the needs of the ship, the fleet, the type of ship, and the available funds.

Regular overhauls are normally scheduled about every 60 months. Doing the required heavy maintenance and overhauls that cannot be tended to while the ship is underway usually takes 2 to 6 months. During this time, many new electronics installations and equipment or system overhauls can be done with the assistance of yard, tender, or civilian contract personnel.

FLEET MODERNIZATION PROGRAM (FMP)

The fleet modernization program is a major effort to ensure that ships of the fleet are as ready as possible to meet operational requirements.

Each year the Navy re-evaluates its missions and the threat faced by its forces. Analysis of these factors leads to a new statement of required operational capability (ROC) in the new projected operational environment (POE) for each class of ships. The new ROC and POE are then used as the basis for determining the characteristics required in new ships to be built and the requirements for modifying and modernizing existing ships. Attaining the required operational capabilities to enable every ship to best carry out its assigned missions is the primary goal that drives the fleet modernization program (FMP). Other major supporting goals served by the FMP include increasing fleet readiness by improving safety, repair, habitability, reliability, and maintainability; and accomplishing the highest priority alterations in the most timely manner. The FMP needs are reviewed and updated annually by both the CNO and TYCOM. This forms the approved class improvement plan for each ship class.

AVAILABILITIES

An availability is an assignment of a ship to a repair facility for repairs beyond the capability of the ship's force. Besides regular overhaul, several types of availabilities are assigned, according to the needs of the individual ship or the fleet.

Restricted Availability (RAV)

A restricted availability (RAV) is normally assigned for emergency repairs of problems with prime systems that prevent the ship from fulfilling its mission. When emergency repairs to primary systems cannot be made by ship's force, the commanding officer can request the type commander to assign a restricted availability for the repair of these specific systems. During a restricted availability, the ship is rendered incapable of performing its mission.

Technical Availability (TAV)

A technical availability (TAV) is used when repairs on noncritical systems or equipment must be made by a repair facility or yard. These repairs do not affect the ability of the ship to complete its mission. If necessary,

the ship can get underway without the system or equipment being repaired

Intermediate Level Maintenance Activity Availability (IMAV)

Intermediate level maintenance activity availabilities (IMAVs) involve repairs made by either afloat repair activities (tenders and repair ships) or shore intermediate maintenance activities (IMAs). Their purpose is to accomplish as much intermediate level maintenance and repair work as possible within workload limitations, available finds, and the relative priority of the required work. Although the primary emphasis of IMA effort is on repair work authorized SHIPALTs and AERs are undertaken as IMA workloads permit.

Upkeep Period

The upkeep period is a period of time in a port where the facilities of a yard or tender are available for routine maintenance that cannot be done while the ship is underway. Upkeep scheduled with the assistance of a tender or repair ship is sometimes called tender availability.

Voyage Repairs

Voyage repairs are emergency repairs that must be made to enable a ship to continue on its mission and which can be done without requiring a change in the ship's operating schedule or the general steaming notice in effect. These repairs normally cannot be made by ship's force.

SHIPYARD OVERHAUL

Ships are assigned availabilities at shore-based repair activities as directed by the Chief of Naval Operations. The first scheduled overhaul is normally granted to a ship after an initial operating period of about 2 years. Thereafter, scheduled overhauls depend on the ship type. The amount of time in the shipyard for these overhauls varies. If the shipyard works on a one-shift basis, the overhaul often requires 6 months or longer, depending on the type of ship. The employment schedule, an operating directive furnished by the type commander, indicates when a ship is scheduled for overhaul.

Availability Work Package Development and Modification

For an availability to be a success, the work to be done must be clearly defined in sufficient time to order material and to issue the necessary job orders or contract specifications. The definition of work required is obtained from the ship's database, as reflected in the Current Ship's Maintenance Project (CSMP), and from the results of preoverhaul tests and inspections (POT&I). The work package is developed through a sequence of events that starts with the ship's CSMP and results in an authorized work package control document and the *ship alteration and repair package* (SARP). The development of the SARP is as follows:

Step 1. CSMP validation.–The CSMP undergoes formal review to ensure its accuracy and completeness. This is the responsibility of the ship; however, external assistance is generally provided to enhance the effort. The CSMP provides the biggest input into the development of the SARP.

Step 2. Preoverhaul tests and inspections (POT&Is).–These identify work not previously covered in the CSMP. (They also define more clearly the CSMP work requirements.)

Step 3. TYCOM screening of the CSMP and work identified by POT&Is.–Work may be assigned to off-ship activities or ship's force, or may be deferred until a later availability. Some categories of work will be authorized immediately to allow advanced planning (ordering of material and estimating of the work package).

Step 4. Other POT&Is designated by the TYCOM and the concurrent development of estimates by the naval shipyard or Supervisor of Shipbuilding (SUPSHIPS).–At this time, in preparing for the Work Definition Conference, the ship must place in priority order all work requirements that have been screened but not yet authorized.

Step 5. Maintenance Work Definition Review (complex overhaul [COH]/selected restricted availability [SRA]).–This meeting is scheduled by the TYCOM and held aboard ship with the planning and estimating group. The POT&I information

is used to make the work package fully defined within funding constraints and to prepare it for presentation to the Work Definition Conference.

Preoverhaul

For the best use of the time and funds available for an overhaul, planning for the repairs to be made during the overhaul must be done in advance of the ship's arrival at the repair activity. Advanced planning is required of both the ship and repair activity.

In preparing the electronics work list (most information is obtained from the CSMP) for submission to the EMO, the leading ET must give all the information necessary to assist the shipyard in locating and rectifying the troubles.

The work list indicates all work which should be done during the overhaul, the priority for each item, and the names of the ship's QA inspectors.

The list will be combined with the work lists submitted by the other divisions. Before the ship enters the repair yard, a complete ship's work list will be submitted.

During Overhaul

During an overhaul the electronics division personnel continue to have responsibility for their equipment and its repairs. This includes inspecting the work both during and upon completion of the repairs. Your responsibilities will also include signing off jobs that are completed. To do this properly as a member of the ship's quality assurance team, you must understand and apply the requirements of the Quality Assurance Manual, Remember, once you have signed off the work as being completed, you have "bought" the equipment, whether it works or not.

Postoverhaul

Completing an overhaul requires submitting a report on the completion status of all authorized repairs, canceling or rescheduling of uncompleted work and preparing the ship for its initial voyage after the

Except in unusual circumstances, job orders for uncompleted repair work are closed or canceled when the ship leaves the repair activity. Job orders for authorized alterations, however, are held open until the work is either completed later or canceled by the appropriate systems command.

If the ship leaves the repair facility with unfinished work to be completed by another activity, all outstanding job orders are transferred to the other activity together with all pertinent information and whatever material was assembled for the work.

Should work be desired later on job orders that have been closed or canceled, new requests must be made. When readying a ship for sea, including its initial voyage after an overhaul, the electronics personnel must see that allowances of equipment, tools, and repair parts are on board and properly stowed. The reason is obvious, since negligence can make the ship a liability during action.

Alterations

In addition to the routine maintenance and emergency repairs already mentioned other types of maintenance (such as test equipment calibration and outstanding alterations) can be performed during the availability.

In general, an alteration is any change. It can be major or minor, affecting almost anything about the ship. An alteration can be any of several types: ship alteration (SHIPALT), boat alteration (BOATALT), machinery alteration (MACHALT), ordnance alteration (ORDALT), or alteration equivalent to repair (AER). These alterations are considered military or technical improvements.

A military improvement results in a change of a ship's operational or military characteristics, qualities, or features. It also increases the ability of the ship to meet its ROC. The decision to incorporate a military improvement rests solely with the CNO.

A technical improvement is a change to improve the safety of personnel and equipment and to provide increased reliability, maintainability, and efficiency of installed equipment.

Ship alterations have the following category titles:

Title K, funded and authorized by CNO

Title D, funded and authorized by TYCOM

Title F, funded and authorized by TYCOM

Title K/P, funded and authorized by CNO

TIA, TYCOM issued alterations, no funding required, authorized by TYCOM.

All alterations are managed through the fleet modernization program.

Modifications

Most changes to electronic equipment are modifications called electronic field changes (FC) (previously called electronic alterations). The basic purpose of a field change is to improve performance, reliability, maintenance, operational characteristics, or safety. The type designator indicates how complete the change package is. Some packages contain all necessary instructions, parts, and tools. Other packages contain only instructions. The four types are defined below:

Type I. Requires parts, all of which are included in the FC kit. Also included in the kit are the publication package changes and the materials and special tools required to change one equipment and to revise existing equipment nameplates, publications, and charts.

Type II. May require parts, none of which are included with the field change. This type of FC usually affects only the publications package. If parts and tools are required, they are considered standard stock items and are available as bench spares (for example, wire, lugs, soldering irons, and so on).

Type III. Requires parts, some, but not all, of which are included in the field change kit. The parts not included are considered standard stock items.

Type IV. Does not require parts or use of any special tools. This type of FC is usually published in an EIB article and consists of only a publications change.

There are three classes of field changes. The class designator indicates who is responsible for the funding and installing of the FC.

Class A. Modification may be made by forces afloat or station personnel; no installation funding is required. Approval of Class A field changes to be made by forces afloat indicates only that the work content is within their technical capability. The Class A designation does not require the modification, nor does it require forces afloat to make the modification. The decision of when and how to make the modification is considered to be a forces afloat prerogative.

Class B. Requires fleet funding for and work by naval shipyards, tenders, and so on, when authorized by the TYCOM. Except for Class B field changes presently under way or in the fleet planning stage, this type of field change will no longer be issued.

Class C. Normally requires industrial assistance and requires the appropriate systems command installation funding.

SAFETY

Most accidents are preventable. However, through ignorance or misunderstanding, there is a common belief that accidents are the inevitable result of unchangeable circumstances or fate. This belief fails to consider the basic law of cause and effect. In other words, accidents do not occur without a cause; most accidents are the direct result of some deviation from prescribed safe operating procedures.

A preventable accident may be traced to an ingrained belief or work habit of an individual. This belief or work habit may cause the individual to perform an unsafe act or permit a hazardous condition to exist; when an accident occurs, the cause-and-effect sequence is completed.

One purpose of safety rules is to remind personnel of the dangers inherent in their work. Training in the observance of safety precautions can help avoid preventable accidents and encourage the maintenance of an accident-free work environment. Operating procedures and work methods should stress hazard prevention so that personnel do not expose themselves unnecessarily to injury or occupational health hazards. You can prevent accidents that are about to happen if you are alert to causes and take appropriate remedial action.

SAFETY TRAINING

As a leading ET, you have safety-related responsibilities that may be grouped into three general areas as follows:

1. Responsibilities concerning the electronics division. These responsibilities include ensuring that all personnel in the division are aware of and observe all shipboard safety precautions,

especially those precautions regarding electrical safety.

2. Responsibilities concerning nonelectrical ratings. As an ET1 or ETC, you will automatically be considered an expert on electrical safety precautions. Therefore, you have a responsibility to educate the personnel whose primary duties are nonelectrical about these precautions. The responsibilities in this area are ever increasing, as more and more electronic equipment is used in the various jobs aboard ship.

3. Responsibilities as a petty officer. In this area you have the same responsibilities as all other petty officers in enforcing all safety precautions.

Any failure to follow electrical safety rules or procedures may result in mild to severe shocks. In some cases, death may result. Nearly all shipboard electrical shocks are caused in one or more of the following ways:

1. Unauthorized use of, or unauthorized modifications to, equipment
2. Failure to observe applicable safety precautions in the use of equipment or in working on or near energized equipment
3. Failure to repair equipment that was known to be defective and had previously given users a mild shock
4. Failure to test and inspect equipment for defects, or failure to remedy all defects found by tests and inspections

All of these failures maybe summarized as failure to observe applicable safety precautions.

SAFETY EDUCATION

You cannot expect individuals to observe a precaution unless he or she is fully aware of the dangers involved. One of your first duties, therefore, will be to ensure that all personnel in the electronics division are aware of the dangers and the safety precautions necessary to combat these dangers.

Safety precautions depend to some extent upon the type of ship involved. Ships such as AOs and AEs necessarily have some precautions that must be strictly observed but which are not applicable to other types of ships. Therefore, you should ensure that all personnel read and understand all safety precautions pertaining to the electrical and electronic equipment on your own ship.

Safety precautions for personnel in nonelectrical ratings should include information concerning electrical shock and precautions these personnel must observe when using electrical equipment aboard ship.

Facts to be brought out and points to be stressed to the nonelectrical rating personnel concerning electric shock should include the following:

1. Voltages as low as 30 volts can be dangerous.
2. The dangers from electric shock are much greater aboard ship than ashore.
3. There is little middle ground between a slight tingle and a fatal shock.

Fundamentally, current rather than voltage is the criterion of shock intensity. The passage of even a very small current through a vital part of the human body may cause death. The voltage necessary to produce the fatal current depends on factors such as the resistance of the body, contact conditions, and the path the current takes through the body. The probable effects of shock are shown in the following table.

AC 60Hz (mA)	DC (mA)	Effects
0-1	0-4	Perception
1-4	4-15	Surprise
4-21	15-80	Reflex action
21-40	80-160	Muscular inhibition
40-100	160-300	Respiratory block
Over 100	Over 300	Death

It is imperative to recognize that the resistance of the human body cannot be relied upon to prevent a fatal shock from 115 volts or even lower voltages–fatalities from as low as 30 volts have been recorded. Tests have shown that body resistance under unfavorable conditions may be as low as 300 ohms and possibly as low as 100 ohms from temple to temple if the skin is broken. Volt for volt, dc potentials are normally not as dangerous as ac potentials. This is shown by the fact that reasonably safe “let-go currents” for 60-Hz ac are 9.0 mA for men and 6.0 mA for women, while the corresponding values for dc are 62.0 mA for men and 41.0 mA for women.

The instruction to personnel in nonelectrical ratings regarding the safety precautions they must observe

when using electrical equipment should emphasize the following points:

1. Always visually inspect portable electrical equipment before you use it. Look for damaged plugs, frayed cords, broken or missing ground connections, and the like.
2. Never use portable electrical equipment if there is reason to believe it might be defective. Have it tested by authorized personnel.
3. Make no repairs.
4. Do not use any personal portable electrical equipment aboard ship unless it has been inspected and approved.
5. Always report any shock you receive from electrical equipment, regardless of how slight.

PROMOTING SAFETY

Promoting safety within the electronics division or on the ship in general will require that you, the ET1 and ETC, become safety conscious to the point that you automatically consider safety in every job or operation. Through the use of safety reminders and by your personal example, you will pass safety consciousness on to other personnel. You must be thoroughly familiar with OPNAVINST 5100.19, *Navy Safety precautions for Forces Aflat, and Naval Ship's Technical Manual,* chapter 400. These are the primary sources of safety rules and regulations. Good information concerning safety is also given in the *EIMB, General* NAVSEA SE000-00-EIM-100.

SECURITY

Security of the United States, in general, and of naval operations, in particular, depends in part upon success in safeguarding classified information. All ETs must be security conscious to the point that they automatically exercise proper discretion in performing their duties and do not think of security of information as something separate and apart from other matters. In this way, security of classified information becomes a natural element of every task and not an additional burden. You should be thoroughly familiar with the Department of the Navy Information and Personnel Security program Regulation, OPNAVINST 5510.1. Following its guidance should be second nature to you.

SPACE UPKEEP AND CLEANLINESS

Upkeep and cleanliness of spaces is a very important in the electronics division. The safety and operation of equipment depend on correct and routine upkeep. As a senior petty officer, you should ensure that all spaces are always in excellent shape, with tools properly stowed and equipment properly mounted and covered. The upkeep of spaces should be a daily routine regardless of priorities. Sometimes equipment repairs or other unforeseen events dictate maintenance; however, space upkeep and cleanliness should not be forgotten.

Dangers of fire, damage control, safety of personnel, the possibility of equipment filters clogging up because of dirty space, and many other reasons dictate that your spaces should be kept up and should remain clean.

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